U S WEST, Inc.
Suite 700
1020 Nineteenth Street, NW
Washington, DC 20036
202 429-3136
FAX 202 296-5157

Kenneth T. Cartmell
Executive Director - Federal Regulatory

USWEST

July 14, 1999

Mr. Dale Hatfield
Chief, Office of Engineering and Technology
Federal Communications Commission
445 – 12th Street, SW, 7th Floor
Washington, DC 20554

RE: CC Docket No. 91-273
Final Service Disruption Report, Greely, CO
GRELCOMA

Dear Mr. Hatfield:

On June 14, 1999, U S WEST Communications ("USWC") experienced a service outage in Greely, CO. In accordance with the reporting rules, enclosed is USWC's Final Disruption Report for this outage.

Please contact me if you have questions concerning this report.

Sincerely,

Kenneth T. Cartmell

Attachment

cc: Mr. Richard Smith
Mr. Robert Kimball

Final Service Disruption Report

Reporting Company: U S WEST("USW")

Location of Disruption: Greeley, Colorado

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1. **Date and Time of Incident**:
June 14, 1999, at 1335 MDT.

2. Geographic Area Affected:
Greeley, Ault, Eaton, LaSalle, Windsor and surrounding Colorado communities were affected.

3. Estimated Number of Customers Affected:
52,482 customers were affected by the outage.

4A. Types of Services Affected:
IntraLATA, InterLATA and 911 services were affected.

4B. 911 Service Affected:
Weld County 911 was affected by the outage. The Public Safety Answering Point (PSAP) is located in Greeley, Colorado and was isolated from the tandem. Greeley 911 service was rerouted and service to Ault, Eaton, LaSalle, and Windsor was restored with the completion of the cable patch.

5. Duration of Outage:
911 service for the outlying areas was rerouted at 1430 MDT; other areas were rerouted at 1610 MDT. Service was patched to alternate facilities by 1645 MDT and all reroutes removed by 1715 MDT, for a total duration of 3 hours 40 minutes.

6. Estimated Number of Blocked Calls:
111,900 calls were blocked.

7A. Root Cause of the Incident:
The root cause of the incident was a fiber cable cut.

On June 14, 1999, at approximately 1335 MDT, MV Enterprises severed three fiber optic cables in Greeley, Colorado. MV Enterprises is a subcontractor for D.E.A. Construction and was under contract to place innerduct and fiber cable for ICG Communications.

At the time of the incident, MV Enterprises was boring under the intersection to link with fiber innerduct located across the street, a distance of approximately twenty feet.

USW conduit and cable had been accurately located and marked approximately 7 to 10 feet from the point to which MV Enterprises was boring. The MV Enterprises crew was attempting to position the bore head to reach this location at a depth of 79 inches.

About three to five feet before the correct point was reached, the head of the bore changed direction and pierced the USW conduit, severing three fiber cables.

When the alarms were received, USW Technicians were dispatched immediately. It was necessary to dig up the street to access the conduit; as soon as the excavation was complete and safe to work in, splicers began restoration of the cable.

The trunks from the 911 tandem to the PSAP were remotely accessed and busied out, which allowed the central office areas outside Greeley to forward 911 calls to Loveland, Colorado. A central office technician was dispatched to the Greeley Main CO to manually reroute Greeley 911 calls to a local 7-digit number. The remaining remotes were restored when cable splicing was complete, at 1645 MDT.

7B. Name and Type of Equipment:
One 144-fiber cable, one 48-fiber cable and one 32-fiber cable.

7C. Specific Part of Network Affected:
Interoffice facility.

8. Method(s) Used to Restore Service:
The cables were spliced to restore service.

9. Steps Taken to Prevent Recurrence of Outage:
The following steps have been or will be taken to prevent recurrence of the outage:

- The USW conduit was accurately located and marked. The contractor performing cable locates for USW had also walked the route with the excavators. However, Mark and Stand-by was not performed. USW expectations on this have been addressed with the locate company.

- The cable routes to Ault, Eaton, LaSalle and Windsor will be investigated for the potential to diversify.

10A. Applicable Best Practice(s):
USW reviewed *Network Reliability: A Report to the Nation*, June 1993 and evaluated all recommendations and best practices by focus area. Based on the root cause analysis, the most appropriate focus areas are:

Section A. - Fiber Optics Cable Dig-Ups
Reference 6.1.1 - Best Practices To Prevent Fiber Cable Damage Caused By Digging

Section B - Signaling Network Systems
Reference 6.1.1 - Root Cause Analysis

Section F – E911 Systems
Reference 6.1.1 Diverse Routing of Interoffice Facilities
Reference 6.4 Network Management Center

10B. Best Practice(s) Used:
Section A. - Fiber Optics Cable Dig-Ups
Reference 6.1.1 - Best Practices To Prevent Fiber Cable Damage Caused By Digging

Section B - Signaling Network Systems
Reference 6.1.1 -Root Cause Analysis

Section F – E911 Systems
Reference 6.1.1 Diverse Routing of Interoffice Facilities
Reference 6.4 Network Management Center

110C. Analysis of Effectiveness of Best Practice(s):
Section A. – Fiber Optics Cable Dig-Ups
Reference 6.1.1 - Best Practices To Prevent Fiber Cable Damage Caused By Digging

Analysis: In this incident, the contractors involved in the event did call for a cable locate, and walked the route with the locate contractor. During the boring activity the bore head changed direction and severed the cables.

Section B – Signaling Network Systems
Reference 6.1.1 -Root Cause Analysis

Analysis: While this recommendation in the NRC document is specific to Signaling Networks, USW currently requires a root cause analysis on all significant network failures.

Section F - E-911 Systems
Reference 6.1.1 Diverse Routing of interoffice Facilities – This recommendation describes the optimum configuration of two diverse routes for E-911.

Analysis: The 911 trunks from the tandem to the PSAP were on separate T1 and T3 circuits, however, they were all in the same fiber cable. Since there is an alternate route to the Greeley central office, portions of those trunks have been moved to the alternate route.

Reference 6.4 Network Management Center

Analysis: This recommendation describes the use of centralized network management centers to monitor the 911 network as a unique and separate entity from the rest of the network. USW does not have a NMC specifically monitoring 911, however, network traffic for 911 trunk groups is monitored in the two regional Network Management Centers. USW also has two Regional Network Reliability Operations Centers whose responsibility is to monitor the health of the network through alarm indications.

Contact Person:
Kenneth Cartmell, Executive Director - Federal Regulatory Affairs
U S WEST
1020 19th Street, NW, Suite 700
Washington, D.C. 20036
Telephone (202) 429-3136